

APPARATUS FOR RIVETER

BACKGROUND OF THE INVENTION

1.Field of the Invention

5 [0001] The present invention relates in general to an adjustable riveter apparatus for pulling screw column, and more particularly, to control a length of the screw column for different screws.

2. Description of the Related Art

10 [0002] The riveter apparatus is a very common tool in construction site for pulling screw column. The riveter apparatus make a position head from pulling a plate, than use a column to connect to front end of a rod of riveter apparatus, and the riveter apparatus through a hole on a board. While pressing a handle of riveter apparatus, the rod will back and change
15 the column shape so as to fix on the board. The changed column is made from the rod dragging force and the column backing force, so the distance of dragging relative to quality of riveter apparatus. Further, the rod dragging force too big to over the distance of column need, the column will be destroyed under the handle pressing force and affect the quality of
20 construction. It' s also have problem, while the rod dragging force too small to change the column, the column is not effectiveness. In the past, the riveter apparàtus can not be adjust distance, so the column must to be keeping changed by pressing the handle of riveter apparatus until the optimal distance formed. It makes the column to be destroyed easily, and
25 should be rework. In order to solve the above problem and save working time, the present invention provides an adjustable riveter apparatus for

adjusting the distance of the column so as to improve the quality of construction and prevent the column to be destroyed.

SUMMARY OF THE INVENTION

[0003] It is an object of this invention to provide a riveter apparatus
5 for adjusting the skew column and easy controlling the pulling force.
Further, to achieve high quality construction.

[0004] It is another object of this invention to provide a riveter
apparatus for adapting different construction sits to prevent the column
thread to be destroyed. To make skew column with the riveter apparatus of
10 present invention is more convenient and efficient.

[0005] It is still another object of this invention to provide a riveter
apparatus for adjusting the fine skew column. It can be more precise to
control the column distance to form.

[0006] It is to be understood that both the foregoing general
15 description and the following detailed description are exemplary and
explanatory only and are not restrictive of the invention, as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 shows a part of cross section of whole riveter
20 apparatus according to the invention;

[0008] Figure 2 shows a part of cross section of combination of the
present invention.;

[0009] Figure 3 shows a part of cross section of a rod of the present
invention.;

25 [0010] Figure 4 and 5 shows the riveter apparatus to make an
adjustment according to the invention;

[0011] Figure 6 shows operation of different type is made from riveter apparatus according to the invention;

[0012] Figure 7 shows operation about riveter apparatus according to the invention.

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DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] Referring to Figures 1, 2 and 3, the present invention includes a body 10, a holding part 30 and a pulling part 50. The body 10 has a base 11 and a front tube 12. There is a column 13 inside the base 11.
10 The column 13 further has an adjustable groove 14 with great diameter in end of the adjustable groove 14, a cylinder 15 with smaller diameter in middle of the tube than others, and a chamfer 16 with front thread. In end of the base 11, there is a slot 17 through the adjustable groove 14 as figure 3 shown. The front tube 12 is a hollow-shaped. There is a thread part 18 in
15 end of the front tube 12 so as to spin along the screw into the chamfer 16 of the column 13. An open 19 in front end of the front tube 12, there is a bolt 21 and a cap 22 on top of the bolt 21 that are fixed on the open 19 of the front tube 12. The bolt also has a channel 23.

[0014] The holding part includes a pair of outside-arms 31, inside-arms 32, handles 33 and push arms 34. The outside-arms 31
20 connect to two side of the body 11 respectively. The inside-arms 32 connect to the end of outside-arms 31 respectively, and the push-arms 34 connect to the end of inside-arm 32. Each of portions of the holding part can link together to move. Furthermore, perforation 35 is formed in the
25 middle of the push-arms 34.

[0015] The pulling part 50 is through inside the base 11 and front

tube 12 of the body 10, the pulling part 50 includes an adjustable nut 51, an adjustable rod 53. The adjustable nut 51 is position on the adjustable groove 14 of the column 13. Outside the column, there is a notch 511 as figure 3 shows. The notch 511 can be a shaft 512 that is through the slot 17 of the body 11 to place. As the shaft 512 through the slot 17 of the body 11 than place on the notch 511, the adjustable nut 51 in the adjustable hole 14 only can move along the axis and cannot rotate. Inside the adjustable nut 51, front end is a small thread 513, and back end is a bigger diameter axle-center 514. Furthermore, outside the adjustable nut 51, there is a scale for precise adjusting the length. The adjustable rode 52 is through the push arm 34 and the adjustable nut 51, which includes a front thread 521, a recess 522 and a pattern end 524. The front thread 521 connects to the screw section 513 of adjustable nut 51. The recess 522 has a space for placing a washer 525 so as to adjust accurately and avoid slipping. The stopping channel 523 is through the perforation 35 of the push-arms 34 that makes the push-arms 34 to fix on the stopping channel 523, so the adjustable rod 52 can be operated to revolve. The pattern end 524 can use to rotate the adjustable rod 52. Further, the front end of adjustable rod 52 has a screw hole to turn to the rod 53. In front end of rod 53 is through the bolt 21 and has another screw section 531, which turns to the screw tube for constructing pulling work.

[0016] Referring to figure 4 and 5 shows adjusting process about pulling distance in present invention. In figure 4, while the holder is opened, the push-arms 34 impels the pulling part 50 to front till the adjustable nut 51 touch the end of adjustable channel 14 to stop, which is the limit distance, b, of the holder 33 can be. While turning the pattern end 524 of

adjustable rod 52 in-situs, the adjustable nut 51 is impelled to back a displacement, c, that is opposite to the adjustable rod 52. As the end of adjustable nut 51 and adjustable channel 14 has been adjusted a displacement, c, the holder 33 also can be expand greater than displacement a, and the pulling part 50 can be impelled a distance more than displacement b by push-arms 34 that shows on figure 5. So, if the holder 33 opens a greater distance or greater degree, the pulling part 50 and the screw section 531 will protrude. As above described, pressuring the holder 33 to operate the pulling process, the pulling part 50 could be back out a greater distance so as to provide great adjusting space. To reduce the distance in pulling process, which can invert the adjustable nut 51 and adjustable rod 52 operate way of above described.

[0017] Next, with reference to FIGS. 7, the operation above the present invention does moves the first step connect to thread 531 of the end of pulling part 50, and then through a perforation 71 of an operating board 70. At the same time, pressing the holder 33 of riveter apparatus make the pulling part 50 back to pull so the screw tube 75 has been changed its shape 721 and fixed on the operating board 70. Refer to figure 6, It shows the riveter apparatus is made different shapes from different operation steps.

[0018] The opposite site of screw tube 75 and riveter is screw rod 751. The rod 53 in the front end of pulling part 751 is constructed with an inner screw section. By connected this inner screw section 533 and the screw rod 751 in the front end of screw tube 75, we can proceed the riveter process and then make the distortion 752 of screw tube 75.

[0019] As we mention above, this invention is about the design of

adjustment of adjustable nut 51 and screw connection of adjustable nut with the adjustable shaft 52 in pulling part 50. If we adjusted the screw cap 51, we can make the lateral motion by cross-linked reaction of pulling part 50. And then we can improve the quality of riveter process by the
5 adjustment of pulling force and moment. And we have fine scale apparatus on the adjustable nut 51. We can accurately control the adjustment by adjusting the moving quantities read out by the scale apparatus. Finally, we can obtain accurate operation and quality of pulling cap.

[0020] The invention thus has the advantage that the scan mode is
10 automatically determined. The user does not have to judge the correct scan mode of the scanner by himself/herself.

[0021] Another embodiment of the invention will appear to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and
15 examples to be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.